

# Political Connections and the Allocation of Procurement Contracts

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## Abstract

This paper analyzes whether political connections of public corporations in the United States affect the allocation of government procurement contracts. The paper classifies the political affiliation of S&P 500 companies using hand-collected data that detail the past political position of each of their board members. Using this classification, the study focuses on the change in control of both House and Senate following the 1994 midterm election and on the change in the Presidency following the 2000 election. An analysis of the change in the value of the procurement contracts awarded to these companies before and after 1994 and 2000, respectively, indicates that companies that are connected to the winning (losing) party are significantly more likely to experience an increase (decrease) in procurement contracts. The results remain significant after controlling for industry classifications as well as for several firm characteristics. In total, these findings suggest that the allocation of procurement contracts is influenced, at least in part, by political connections. Thus, this study provides one of the first pieces of evidence showing a direct avenue through which political connections add value to U.S. companies.

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## 1. Introduction

A growing body of recent research finds that political connections add value to the corporation. Studies such as Roberts (1990), Fisman (2001), Faccio (2006), Jayachandran (2006), and Goldman, Rocholl, and So (2007) use stock market data to demonstrate that the value of politically connected companies is affected by changes in the political landscape.<sup>1</sup> However, while these studies point to the value of having political connections, they remain silent about the exact source of this value.

The present study attempts to shed light on this issue by analyzing the allocation of government procurement contracts across the largest U.S. publicly traded companies. Government procurement contracts total more than 3.1 trillion dollars over the sample period between 1990 and 2004, and thus the allocation of these contracts is perhaps the most direct way in which political connections may influence company values.<sup>2</sup>

The following quote from the Wall Street Journal features an anecdotal story that highlights the general question that is analyzed in this study.

*“The tale of Bajagua's success in getting the contract involves, among other things, well-timed campaign contributions to local members of Congress and other political figures. The firm also enlisted people with crucial connections...”*

*WSJ January 29, 2007.*

If, as suggested by the quote above, connections influence contract awards, then companies that are connected to a political party will receive more government contracts during periods in which that political party has greater control relative to periods in which that party has less control. In contrast, during the same time, companies that are connected to the opposing party will receive fewer contracts.

To provide a specific example, consider the case of two companies in the S&P500 that receive government procurement contracts during the 1990s. The two companies, Phillips

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<sup>1</sup> Fisman, Fisman, Galef, and Khurana (2007) is a notable exception as they do not find the effect with companies that are connected to Vice President Dick Cheney.

<sup>2</sup> Studies by Khwaja and Mian (2005) and Faccio, Masulis, and McConnell (2006) also study how politicians generate firm value. These studies, discussed below, look at companies in countries in which there is a high level of corruption and focus on the impact of politicians on a company's loans.

Petroleum and Occidental Petroleum, are both in the Petroleum and Natural Gas industry (based on the Fama-French industry classification). Phillips Petroleum has several former Republicans on its board of directors and no former Democrats while Occidental Petroleum has several former Democrats on its board and no former Republicans (see Table 1 for a detailed description of these companies and their politically connected board members). For example, Phillips Petroleum has on its board James Edwards who was the Energy Secretary under President Reagan between 1981 and 1982. Occidental Petroleum has on its board Albert Gore who was a Tennessee Senator with the Democratic Party until 1971. For our study, Phillips Petroleum is defined as a Republican company and Occidental Petroleum as a Democratic company.

What happens then to the government contracts that these companies receive once there is a change in the political landscape? In this example, we focus on the 1994 midterm election in which control of the House and Senate changes from the Democratic to the Republican Party. As our analysis indicates, both companies experience big changes in their government contracts around this time. Phillips Petroleum's government procurement contracts increase from a total of \$120 million during the 1990 to 1993 period to a total of \$289.3 million in the period between 1995 and 1998. In contrast, Occidental Petroleum experiences a decrease in contracts from \$169.5 million during the 1990 to 1993 period to \$143.7 million in the period between 1995 and 1998. Thus, while both companies operate in the same industry and have seemingly similar characteristics, the company with a Republican (Democratic) board experiences an increase (decrease) in its government contracts following the 1994 midterm election. This anecdotal case study demonstrates what we analyze more rigorously in the remainder of the paper.

More generally, the paper focuses on a sample of all companies that are in the S&P500 in the years 1994 and 2000. The choice of 1994 and 2000 as the two focal points is based on the fact that there is a shift in political control in both the 1994 midterm election and the 2000 presidential election.<sup>3</sup> The 1994 midterm election results in a shift of control in both the House and the Senate from being majority controlled by Democrats to being majority controlled by Republicans. The 2000 presidential election results in a shift of control of the presidency from

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<sup>3</sup> In principle, the analysis could be extended to other elections in which a power shift occurs. We face two constraints though: First, the board data (described in section 2.4.) are not available in the EDGAR database before 1994. Second, given the long-term nature of procurement contracts (described in section 2.1) we can only analyze elections with power shifts that occur before 2004. These prerequisites result in the selection of the 1994 midterm election and the 2000 presidential election for the analysis in this paper.

Democratic to Republican. These changes imply that the influence over the allocation of procurement contracts is likely to switch from the Democrats to the Republicans.<sup>4</sup>

For each company, the study first identifies the political party to which the company is connected, as measured by the political background of the individuals on the board of directors. The study then calculates the change in the value of each company's procurement contracts surrounding the 1994 and the 2000 election. Specifically, companies in the S&P500 in 1994 and in 2000 are classified into one of the following three categories: (1) Those that are connected to the Republicans, (2) those that are connected to the Democrats, and (3) others.<sup>5</sup> The classification of political connections is based on hand-collected data detailing the past political positions held by each of the board members of S&P500 companies in 1994 and 2000. A company is classified as being Republican (Democratic) if it has at least one director with a past political position with the Republicans (Democrats) and if the company has no other director with any past political position with the Democrats (Republicans).

Given the above classification, for each company in the 1994 sample (2000 sample) we compare the total value of procurement contracts that it receives between 1990 and 1993 (1996 and 1999) with the total value of these contracts that it receives between 1995 and 1998 (2001 and 2004). The procurement contracts that are considered include all contracts awarded to the company itself and to any of its subsidiaries.

The main findings for the 1994 sample are that companies connected to the Republicans are more likely to experience an increase in the value of their procurement contracts following the 1994 change in the political landscape. The paper also finds that companies connected to the Democrats are more likely to experience a decrease in the value of their procurement contracts following the 1994 change. These results are both economically and statistically significant and remain significant after controlling for several company characteristics such as size, book-to-market ratio, and capital expenditure. The results for the 2000 sample are qualitatively the same as for the 1994 sample. In this case, again, companies that are connected to the Republicans are more likely to experience an increase in contracts while companies that are connected to the Democrats are more likely to experience a decrease in contracts following the 2000 presidential

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<sup>4</sup> See below for a more elaborate discussion of how procurement contracts are awarded.

<sup>5</sup> Others include companies without any political connection and companies with political connections to both parties.

election. The only difference in the results here is that the decrease in contracts of the Democratic companies is not statistically significant.<sup>6</sup>

The paper addresses several interpretations of the results. First, one might ask whether companies that are defined as Republican simply have preferences that are naturally aligned with the Republican agenda and, therefore, also receive more contracts when Republicans are in power. This argument especially has merit on an industry level as Republicans tend to favor certain industries while Democrats tend to favor others (e.g. oil companies likely have a preference for the Republican agenda). Thus, it may be the case that Republican boards serve in companies that are in a particular industry that stands to benefit from a win of the Republican Party due to its specific political platform and regardless of whether or not the company itself is politically connected. To deal with this issue the analysis is repeated after controlling directly for an industry effect with industry dummies in general as well as with dummies for those specific industries in which there is a larger concentration of politically connected companies. The results remain unaffected by these controls. Furthermore, a direct test of the distribution of Democratic and Republican companies across the Fama-French 30 industries (see Figure 1) suggests that the two distributions are not statistically different from each other. Thus, political board members represent connections rather than industry-level preferences.<sup>7</sup>

A second issue, related to the above point, is whether the results are due to the fact that Republican companies are on a different trajectory than Democratic companies and are thus inherently different. To address this issue the analysis is repeated after controlling for a number of company characteristics including companies' past sales growth (as well as past growth in procurement contracts and past growth in company size). Controlling for these trends does not affect any of the results.

A more general approach that captures any possible unobserved difference in trends between Republican and Democrat companies is to conduct a placebo test. For this test we choose 1997 as the event year because the six-year period between 1994 and 2000 had no changes in political power. If indeed Republican and Democrat companies are on different

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<sup>6</sup> In the empirical specification, Republican companies are compared to all S&P 500 companies, and Democratic companies are compared to all S&P500 companies. A simpler analysis that compares Republican companies to Democrat companies yields even stronger and more pronounced results.

<sup>7</sup> The fact that board connections do not represent industry preferences has also been established in Goldman Rocholl and So (2007) who show that post election stock returns of companies connected to the winning (losing) party go up (down) above those of their industry.

trajectories and our results do not come from the change in the political landscape, then we should also find that Republican companies obtain more contracts following 1997 and Democratic companies obtain less contract following that year. However, when we repeat our tests in the six-year window around the 1997 event year, we find that the changes in contracts to Republican companies and to Democrat companies are not statistically different from each other and from other S&P500 companies. Thus, the results are due to the specific change in the political landscape.

A third and final observation is with respect to whether companies hire political board members right before they are about to receive government contracts. The data suggest that this is not the case. In our sample, politically connected directors are nominated on average more than 5 years before either election.<sup>8</sup>

The present study focuses on individual connections of the board as a form of obtaining government access. Past studies in the political science literature have argued that companies use political donations in much the same way (see literature review below). Hence, our analysis is repeated after controlling for political donations. In particular, we classify all companies based on their political donations into those that donate more to Republicans, those that donate more to Democrats, and those that do not donate. Controlling for this classification, we find that companies' preferences in donating more to Republicans or Democrats do not explain changes in contract awards, while the political classification of the board of directors still remains significant as before. This last result can also be viewed as additional indication that board affiliations represent more than company preferences for a certain political party. This is because companies with agendas that correlate with a given party are also likely to donate to the political campaign of that party. Thus, controlling for political donations is one way of controlling for any unobserved company level political preferences.

In sum, the paper shows that companies that are connected to the winning party experience an increase in their contracts upon a change in control of the House and Senate or upon a change in control of the administration, while those connected to the losing party suffer a decrease in their procurement contracts following these changes. The results remain significant after controlling for the industry of the company as well as for other company characteristics.

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<sup>8</sup> A detailed description of the time trend of board nominations for our sample is provided in Section 2.4.

The paper thus highlights one crucial way in which political connections can have a direct influence on company value.

Note explicitly that we do not argue whether or not these findings are a result of corruption and resource misallocation or whether they are the result of companies benefiting from natural social connections. This paper merely points out that connection to the winning (losing) party lead to a statistically and economically significant increase (decrease) in contracts.

The process by which politicians can influence the awarding of contracts to specific companies is by its nature not a transparent one. For this reason, our paper looks at both an event in which the political power changes within the legislative branch and an event in which the political power changes within the administration. From a formal standpoint, the process of awarding government contracts begins when an agency of the federal government identifies a need for a purchase of a good or service. Each agency has a contracting officer who posts a solicitation on the Federal Business Opportunities website. Companies then submit their offers for review by agency personnel who evaluate the alternative offers and make the final decision.<sup>9</sup> In practice, there are many ways in which connected companies can influence the design and award of contracts. For example, according to the Federal Acquisition Regulation (FAR), the government encourages bidding companies to interact with government agencies prior to the agency putting out its Request For Proposal (RFP). The purpose of this is to help the government in defining its needs. This, however, allows connected companies to help shape the RFP and thus increase the chances that they would win the contract. In addition to this, contractors can approach different Congressional Committees with requests to increase funding for goods and services that they provide. Finally, lawmakers often write letters of recommendations on behalf of contractors (albeit for the most part generic ones).<sup>10</sup> Thus, as both legislators and administration officials have some capacity to influence contract awards, the goal of this paper is to see whether or not there is empirical evidence that connected companies benefit in this dimension. The situation in which companies may succeed in influencing the allocation of government contracts is one example of the more general case in which an interest group may use non-market interactions to achieve certain goals (see Baron, 1999).

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<sup>9</sup> For more details on this process see Halchin (2006).

<sup>10</sup> See Palmer (2005).

Political scientists have mostly focused on how political donations and lobbying activity influence the government. For example, Snyder (1990) shows both theoretically and empirically that political donations are a form of investment. He shows that politicians with a higher probability of winning receive more donations. More recent work by Ansolabehere, de Figueirdo, and Snyder (2003) (see also references therein) suggest that patterns of political donations are not consistent with an investment that aims to gain a financial return but rather reflect a mechanism through which donating groups express their political preferences. Consistent with this view, Ansolabehere, Snyder, and Ueda (2004), Aggrawal, Meschke, and Wang (2007), and Goldman, Rocholl, and So (2007) all find that political donations do not benefit shareholders.<sup>11</sup> In particular, Goldman, Rocholl, and So (2007) show that post-election stock returns of companies that donate more to the winning (losing) party are positive (negative) but not significantly higher (lower) than their industry's returns. This suggests that companies that donate more to Republicans (Democrats) are in industries that stand to benefit from a Republican (Democrat) regime. They also find that the correlation between board affiliation to a party and donation to that party is only 6%. Finally, Stratmann (2005) provides a summary of the literature which relates donations to indirect measures of firm value such as the probability of passing a favorable congressional vote.

Although much research has focused on political donations, Groseclose, Milyo, and Primo (2000) argue that companies' expenditures on lobbying activities far outweigh their soft money or PAC contributions. Thus, it would seem more likely that companies attempt to influence the government via their lobbying activity rather than through their donations. Work by Wright (1990), Goldberg and Maggi (1999), de Figueiredo and Silverman (2002), and Drope and Hansen (2004), to name a few, all find evidence that is consistent with lobbying activity being a powerful tool used to influence the transfer of government resources to various industry groups.<sup>12</sup> We add to this literature by focusing on company-level connections rather than industry-level ones. Furthermore, unlike most of the above work we explore the direct monetary reward that accrues to the company (somewhat similar to De Figueiredo and Silverman 2002 who show this in the context of universities lobbying). While lobbying activity, of course, can

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<sup>11</sup> One notable exception are Gulen, Cooper, and Ovtchinnikov (2007) who show that the number of individuals the company donates to can impact long-term stock returns.

<sup>12</sup> See also the theoretical work of Grossman and Helpman (1994) that models the optimal lobbying behavior of interest groups.



also impact contract awards we do not have access to such data and so we cannot test for its importance. If anything this might add noise to our empirical specification and make it harder for us to obtain the above results.

As mentioned before, we do not argue that the findings in this paper are a result of corruption. However, in the extreme case, establishing political connections for the purpose of receiving favorable government treatment can result in corruption. Several authors analyzed the theoretical causes and consequences of corruption. For example, Shleifer and Vishny (1993) show how corruption affects government resource allocation and economic development. Banerjee (1997) argues that it is optimal to define an activity as being corrupt (illegal) in cases where the government has a role in solving a market failure. Ades and Di Tella (1999) analyze the incentive to engage in corrupt activity as a function of the competitiveness of the bribing firm's market and the magnitude of the resulting industry rents. Finally, Acemoglu and Verdier (2000) demonstrate that corruption can arise as part of the second best equilibrium exactly in those markets in which the government attempts to intervene and solve socially inefficient market failures.

Most closely related to this paper are studies by Khwaja and Mian (2005) and Faccio, Masulis, and McConnell (2006) who show several direct ways in which companies benefit from having political connections.<sup>13</sup> In particular, Khwaja and Mian (2005) demonstrate that companies in Pakistan with political connections receive more loans and default on these loans at a much higher rate relative to non-connected companies, suggesting that these loans are granted based on political considerations. Similarly, Faccio, Masulis, and McConnell (2006) look at a cross-country sample of bankrupt companies that are politically connected and show that these companies are much more likely to get bailed out.<sup>14</sup> While our study complements the above two papers, it differs from them in two key ways. First, this study focuses on the value created by political connections in the U.S. which is a country with a strong legal system and relatively low levels of corruption. Second, our study considers a different and perhaps more direct source of political rents: government contracts.

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<sup>13</sup> Shleifer and Vishny (1994) analyze theoretically the opposite case in which politicians use their connections to a company in order to further their political objectives while Bertrand, Kramarz, Schoar, and Thesmar (2006) show empirically that politically connected companies can help their politicians.

<sup>14</sup> Kroszner and Stratmann (1988) provide indirect evidence that politics matter in the US by looking at the competition among interest groups and how they donate to political institutions.

Finally, Karpoff, Lee, and Vondryk (1999) provide evidence on the treatment of companies who receive government defense procurement contracts and then commit fraud in an attempt to deceive the government. They show that the penalty incurred by these companies is much less severe if the company is in the group of the top 100 government contractors. While their paper suggests that having large government contracts provides the company with preferential treatment, our paper finds that the source of the preferential treatment might be the company's board connections which result in large contracts.

The rest of the paper is organized as follow. In Section 2 we describe the data in more detail and specify the empirical methodology. In Section 3 we highlight the key findings of the paper and discuss their interpretation. Section 4 describes several robustness tests. Section 5 concludes.

## **2. Data description**

The analyses in this paper utilize two event periods and two types of data. The first event period spans the time around the 1994 midterm election, while the second event period covers the time around the 2000 presidential election. The first data set comprises information on all U.S. government procurement contracts in the sample period between 1990 and 2004. The second data set consists of original data containing information regarding the political affiliation of each board member of all companies in the S&P500 at the end of 1994 and at the end of 2000. Both data sets are described in more detail below. In addition, we hand-collect information regarding the subsidiaries of all S&P500 companies in 1994 and 2000 and obtain CRSP and COMPUSTAT data as well as Fama-French industry classification data. Finally, the SDC Platinum database by Thompson Financial is used for checking merger and acquisition activities or divestitures by S&P500 companies in the sample period.

## 2.1. Procurement data

Procurement contract data on the company level are available from the Federal Procurement Data System – Next Generation (FPDS-NG).<sup>15</sup> The FPDS-NG, which is operated and maintained by Global Computer Enterprises, replaced the Federal Procurement Data Center (FPDC).<sup>16</sup> The FPDS-NG contains all procurement contracts that are awarded by the U.S. Government and that exceed an individual transaction value of \$2,500.<sup>17</sup> The largest exceptions to this reporting requirement are the U.S. Postal Service and several legislative and judicial branch organizations.<sup>18</sup> FPDS-NG reports procurement contracts for each company that is a separate legal entity, independent of the ultimate owner of that company. This means that procurement contracts for subsidiaries of companies are not aggregated on the parent company level, which aggravates the use of these data for the purpose of academic research. The exact matching procedure used in this paper is described in detail in sections 2.2. and 2.3.

Table 2 shows the aggregate value and number of procurement contracts over the sample period between 1990 and 2004. The yearly value increases substantially over the sample period from \$158 billion in 1990 to \$351 billion in 2004. In particular, it increases greatly after 2001 as a result of the increased spending following the events of September 11, 2001. Similarly, the number of procurement contracts increases from 371,514 in 1990 to 2,843,212 in 2004. The total number of procurement contracts in the sample period exceeds 11.5 million and the aggregate value is more than \$3.1 trillion. Table 2 also shows which departments award the major share of these procurement contracts. The defense department is by far the largest contractor with an average share of 65% of the awarded value, followed by the Energy Department with an average share of 10% and NASA with an average share of 5%. Note that defense-related spending is broadly defined and can include contracts with many non-defense companies such as IBM and

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<sup>15</sup> A "procurement contract" is any of a number of documented legal interactions between the government and a contractor including a "contract award" (the basic terms and conditions of the contract including the goods and services to be provided), a "modification" (which may be an exercise of an option to modify the contract), or an "order" (for example an order against a government-wide contract).

<sup>16</sup> FPDC, implemented under Public Law 93-400, provides data for Congress, the Executive branch, the private sector, and the public. FPDC was a part of the U.S. General Services Administration and operated and maintained the original Federal Procurement Data System. FPDS-NG is the central repository of statistical information on federal contracting.

<sup>17</sup> The reporting threshold for individual transactions was \$25,000 before 2004.

<sup>18</sup> US Census Bureau reports total procurement amount annually in the Consolidated Federal Funds Report (CFFR) but no detailed data on the company level are available. The total procurement amount in FPDS-NG covers more than 85% of the total amount in CFFR over the sample period.

Compaq. Other departments comprise the remaining 20% share. The figures in Table 2 suggest that the share of the Defense Department is relatively stable over time, with a maximum of 68.9% in 2004 and a minimum of 58.8% in 1993; this is the year when NASA is awarded its highest relative share in any of the sample years.

## **2.2. Subsidiary data**

Many companies receive a substantial share of their procurement contracts through their subsidiaries. As an example, Halliburton receives aggregate procurement contracts of \$7 million in 1998, while its subsidiary KBR receives procurement contracts of \$43 million in the same year. For this reason, we collect information on all subsidiaries of S&P500 companies from Exhibit 21 (Subsidiaries of the Registrant) of their annual 10-K reports. These are available in the EDGAR database of the SEC. S&P 500 companies and their subsidiaries are then matched with the list of companies in the FPDS-NG database.<sup>19</sup> The procurement contracts of S&P500 companies and their subsidiaries are finally summed up to obtain the aggregate value of procurement contracts for each company in the S&P500 and for each year over the sample period.

## **2.3. Resulting sample**

This procedure results in a total sample of 411 S&P500 companies that receive procurement contracts in the period between 1990 and 1998 and a total of 412 companies that receive procurement contracts in the period between 1996 and 2004. For the first event period, 17 of the 411 companies have procurement contracts of less than one million dollars in aggregate throughout the 1990-1998 period and are therefore excluded from the sample. Furthermore, a number of companies are involved in substantial merger and acquisition activities or divestitures over the sample period. To ensure consistency and comparability of the procurement contracts of these companies over time, their procurement contracts are adjusted in the following way. First, 22 companies in the S&P500 are acquired by other companies in the S&P500 during the sample period. In this case, the procurement contracts of the target company are added to those of the

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<sup>19</sup> The procurement data used in this paper are based on the September 2006 status of FPDS-NG.

acquiring company before the merger and are thus comparable to the procurement contracts of the combined entity after the merger.<sup>20</sup> Second, 45 companies in the S&P500 are acquired by non-S&P500 companies and are thus excluded from the sample. Third, over the sample period 8 S&P500 companies sell units or divisions in which the transaction value exceeds one billion dollars. To ensure the comparability of the awarded government contracts, these companies are excluded as well. The final sample for the first event period thus consists of 319 companies.

For the second event period, the same criteria are applied. Out of the 412 sample companies, 47 are excluded as they are awarded procurement contracts of less than one million dollar in the event period. Another 12 companies merge with other S&P500 companies, and thus the procurement contracts of these target companies are added to those of the acquiring companies. An additional 15 companies are further excluded; 8 companies merge with non-S&P500 companies, and 7 companies sell units or divisions with a transaction value of more than one billion dollars. After excluding these companies, the final sample results in a total of 338 companies.

#### **2.4. Board data**

Board connections are derived by considering the composition of the board of directors at the end of 1994 and 2000 of all S&P500 companies with procurement contracts and analyzing the background of each board member. Section 14 of the Securities and Exchange Commission (SEC) Act requires companies to file a definite proxy statement (submission type Def 14a), containing information about their board members. These filings, which are hand-collected from the EDGAR database of the SEC, contain a brief description of each board member's career background. Based on these data, it is possible to identify whether board members are connected to the Republicans, to the Democrats, or to neither. A board member is defined as being politically connected if he or she at any time prior to 1994 and 2000, respectively, held a position such as Senator, Member of the House of Representatives, Member of the Administration, or was a Director of an organization such as the CIA, SEC, or FDA. A full list of these positions is provided in Table 3.

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<sup>20</sup> For these companies, the accounting variables such as sales, assets, EBITD, capital expenditure, and book-to-market ratio are adjusted in the same way.

Panel a) of Table 3 shows the descriptive statistics for the 319 sample companies used in the analysis of the 1994 midterm election. According to the definition used in this paper, 79 of the 319 companies are connected to the Republican Party as they have at least one board member with a former political position with the Republicans, but no board member with a former position with the Democratic Party. Similarly, 36 companies are defined as being connected to the Democratic Party as they have at least one board member connected to the Democrats, but no board member connected to the Republicans. The remaining 204 companies are connected either to both parties (30 companies) or to neither (174 companies). Note that the expectation is that companies connected to both parties should not exhibit any change in contracts. This is true as long as the strength of their connection to one party is the same as the strength of their connection to the other. While a separate analysis of these companies is interesting in principle, the fact that some have strong connections to one party and weak connections to the other implies that a further classification of this group does not generate any conclusive statistical results. The descriptive statistics in Panel a) show that, on average, companies that are connected to the Republicans tend to be larger than those that are connected to the Democrats.

Panel b) of Table 3 presents the descriptive statistics for the 338 sample companies used in the analysis of the 2000 presidential election. While 54 companies are connected only to the Republicans, 35 companies are connected only to the Democrats. The remaining 249 sample companies are either connected to both parties (23 companies) or to neither (226 companies). Panel b) also confirms the evidence from Panel a) that companies that are connected to the Republicans tend to be larger than companies that are connected to the Democrats.

As mentioned earlier the industry distribution of Republican and Democratic firms is relatively evenly distributed (see Figure 1) in both years and this suggests that there is no major concern about Republican or Democrat companies representing industry preferences that are correlated with the agenda of one of the two parties. A more formal chi-square test finds that the two distributions are not statistically different from each other (p-values of 0.9 for 1994 and 0.6 for 2000).

Finally, while not reported in the table there are only 5 companies that switch from being connected to one party in 1994 to another party in 2000. Thus, political connections seem to be long-term connections.

Table 4 provides descriptive statistics of the timing of nominations. Panel a) of Table 4 shows that former politicians are hired long before either of the events studied. On average, these directors are on the board more than five years before the elections. Panel b) of Table 4 describes the timing of nominations relative to the presidential and legislative cycles. In particular, the table shows several key points. First, most of the nominations occur in a year following a presidential or a midterm election. More than 60% of the nominations (230 out of 371) occur in the year following a presidential or midterm election. Second, while the number of nominations of Republican (Democratic) board members is nearly the same under Republican or Democratic Presidents, Republicans (Democrats) are much more likely to be nominated in times of Democratic (Republican) control of house and senate. For example, under Republican senate majority 69 out of 134 nominations are of Republican board members, representing 52% of the total. However, under Democratic senate majority 175 out of 237 nominations are of Republican board members, representing 74% of the total. Thus, a higher percent of Republicans are nominated during a period of Democratic majority.

The numbers above suggest that nominations are driven more by supply than by demand. Demand-driven nominations would imply more Republican (Democratic) nominations under Republican (Democratic) regimes, while supply-driven nominations would potentially imply the opposite because the supply of former Republicans (Democrats) is higher when Democrats (Republicans) win the majority. Thus, it would seem that politicians do not get hired when they are most valuable (right at the beginning of their party's rule) but rather when they become available. This is consistent with a situation in which there is a limited supply of politicians who companies view as both *able* and *willing* to use their connections for the benefit of a specific company.

Table 5 reports the value of the procurement contracts for the sample companies for the two event periods. The figures in the left column of Panel a) show that S&P500 companies receive procurement contracts totaling more than \$475 billion between 1990 and 1998. This represents a substantial share of the \$1,552 billion of total procurement contracts in FPDS-NG over that period. The highest share of the contracts goes to Republican companies even though there are only 79 Republican companies as compared to 204 companies classified as others.

The column on the right hand side of the table reports average numbers. These figures suggest that the mean value of procurement contracts to Republican companies is substantially

higher than that to Democratic companies, which is itself higher than that for the rest of the companies. The average value of procurement contracts for the three groups over the sample period amounts to \$3,771 million, \$882 million, and \$716 million, respectively. These figures suggest the existence of a positive correlation between the political connections of a company and the value of its government procurement contracts.

While the average value of procurement contracts in the pre-election period between 1990 and 1993 is about \$589 million, it increases to \$732 million in the post-election period between 1995 and 1998. However, there is a remarkable difference between Republican and Democratic companies. While the average Republican company experiences an increase of \$504 million in procurement contracts, the average Democratic company suffers a decrease of \$75 million. Other companies see an average increase of \$42 million.

Panel b) of Table 5 presents the statistics for the second event period between 1996 and 2004. The numbers exhibit similar patterns as in Panel a). The highest value of procurement contracts is awarded again to Republican companies. They receive on average \$3,908 million over the sample period. While companies with Republican boards receive on average \$1,495 million worth of procurement contracts between 1996 and 1999, this number increases by 35.0% to \$2,018 million between 2001 and 2004. This growth rate is much higher than the 10.9% growth rate for Democratic companies. A seemingly surprising result can be found for the third group, which comprises the companies that are connected either to both parties or to neither. These companies experience the largest average increase of 58.1% in their procurement contracts.

A further examination of this group shows that this last figure is almost entirely due to three companies, which are connected to both parties: Boeing, Northrop Grumman, and Raytheon. They receive more than \$280 billion worth of procurement contracts between 1996 and 2004. Excluding these companies from the third group leads to a decrease in the value of procurement contracts from \$518 billion to \$236 billion and a drop in the growth rate from 58.1% to 20.7%. This last growth rate is substantially lower than the growth rate for Republican companies. The fact that a small number of companies may have a substantial impact on the overall averages is of crucial importance in the design and specification of an appropriate empirical test. This will be described in the next section.



Overall, these figures provide the first piece of evidence suggesting that political connections of companies may influence how procurement contracts are allocated.

### 3. Empirical Results

The purpose of the empirical analysis is to determine whether the political connections of the board influence the value of procurement contracts that companies receive a) before and after the change in majority in House and Senate following the 1994 midterm election and b) before and after the change in Presidency following the 2000 presidential election. The analysis proceeds in two steps. First, we show univariate results. Second, we present multivariate analyses that control for other variables.

#### 3.1. Univariate Results

The two variables of interest are the change in the value of procurement contracts a) between the four-year period before and the four-year period after the 1994 midterm election and b) between the four-year period before and the four-year period after the 2000 presidential election. To minimize the impact of outliers in a specific year and to take into account the long-term nature of public procurement contracts, the procurement contracts for each sample company are aggregated over the two four-year periods and then compared to each other. The first variable of interest, the change in the value of the sum of procurement contracts between the two periods around the 1994 midterm election, is defined as

$$\Delta C_i = \sum_{t=1995}^{1998} C_{i,t} - \sum_{t=1990}^{1993} C_{i,t}$$

where  $C_{i,t}$  represents the dollar value of procurement contracts for company  $i$  in year  $t$ .<sup>21</sup>

Equivalently, the second variable of interest for the two periods around the 2000 presidential election is defined as

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<sup>21</sup> Note that the election year is not included in the calculation of the dependent variable to eliminate any potential abnormal behavior in an election year. In a robustness test, we include the election years, and the results do not materially change.

$$\Delta C_i = \sum_{t=2001}^{2004} C_{i,t} - \sum_{t=1996}^{1999} C_{i,t}$$

As mentioned earlier, this variable turns out to have an uneven distribution across the sample companies with some extreme negative and positive values. As an example, the highest negative difference for the first event period is found for Perkin Elmer, which loses \$6.6 billion in government procurement contracts; the highest positive difference is found for Lockheed Martin, which gains \$29.2 billion in these contracts. More formally, we test whether the two variables of interest are normally distributed using the Shapiro-Wilk and the Shapiro-Francia test. The tests reject this null hypothesis at the 1% level for either of the sample periods. The variables exhibit significant levels of skewness and kurtosis which need to be taken into account in the design of the empirical specification. To deal with these extreme values in the univariate statistics, the sample is thus divided into five groups with the same number of companies in each group. Companies are sorted into these five groups based on the value of  $\Delta C_i$ . For example, Group 1 comprises those companies with the lowest  $\Delta C_i$  implying that companies in this group have experienced the lowest increase or the highest decrease in the value of their contracts.

Panel a) of Table 6 shows that for the 1994 event the average difference for the companies in Group 1 is indeed negative, i.e. they receive less procurement contracts after the midterm election relative to before the election. As Panel a) further indicates, the same is true for Group 2 although here the difference is obviously less negative than that for the first group. Group 3 contains those companies that do not experience a major change in the value of their procurement contracts in the pre- and post-election period. Finally, companies in Group 4 and Group 5 receive substantially more procurement contracts after the election than before the election.

Panel a) also shows the distribution of Republican and Democratic companies across the five groups. The number of Democratic companies almost monotonically decreases from 12 in the first group to 4 in the fifth group. This suggests that Democratic companies are overrepresented among those companies that lose procurement contracts. By contrast, the highest number of Republican companies can be found in the highest group while the lowest number can be found in the second-lowest group. This suggests that Republican companies are overrepresented among those companies that receive more government procurement contracts following the election.

Panel b) of Table 6 shows the respective figures for the 2000 event period. In line with the results for the first event period, the average difference is negative for companies in Group 1 and Group 2, it becomes slightly positive for companies in Group 3, and it is substantially positive for companies in Group 4 and in particular in Group 5. While there are slightly more Democratic than Republican companies in Group 1 and Group 2, the number of Republican companies significantly outweighs the number of Democratic companies in Group 4 and Group 5. This means that Republican companies are also overrepresented among those companies that gain procurement contracts after the 2000 presidential election.

In the following section, we consider the statistical significance of these changes when controlling for other company and industry characteristics.

### 3.2. Multivariate results

The previous section documents that the change in procurement contracts before and after the 1994 (2000) midterm election (presidential election) has a non-normal distribution with some extreme negative and positive outliers. For the multivariate analysis of the impact of political connections on the value of procurement contracts, the dependent variable is thus defined as the log of the change in the sum of procurement contracts between the two periods around the 1994 midterm election:

$$\ln \Delta C_i = \begin{cases} \ln\left(\sum_{t=1995}^{1998} C_{i,t} - \sum_{t=1990}^{1993} C_{i,t}\right) & \text{if } (\ ) > 0 \\ -\ln\left[-\left(\sum_{t=1995}^{1998} C_{i,t} - \sum_{t=1990}^{1993} C_{i,t}\right)\right] & \text{if } (\ ) < 0 \end{cases}$$

The equivalent variable for the change in procurement contracts around the 2000 presidential election is defined as:

$$\ln \Delta C_i = \begin{cases} \ln\left(\sum_{t=2001}^{2004} C_{i,t} - \sum_{t=1996}^{1999} C_{i,t}\right) & \text{if } (\ ) > 0 \\ -\ln\left[-\left(\sum_{t=2001}^{2004} C_{i,t} - \sum_{t=1996}^{1999} C_{i,t}\right)\right] & \text{if } (\ ) < 0 \end{cases}$$

While this choice of the dependent variable better addresses the uneven distribution of the raw variable, it maintains its cardinality. In the robustness section, we report results for a different specification of the dependent variable. There, we use an ordered logit model in which the dependent variable is an ordinal variable that takes a value of 1 to 5 based on a company's classification into one of the five  $\Delta C_i$  groups for the respective event period. As the robustness section will show, the results are qualitatively the same for the two dependent variables.

The independent variables of interest are two dummy variables: *dRep* takes a value of one if a company has at least one board member connected to the Republicans, but no board member connected to the Democrats and a value of zero otherwise; *dDem* takes a value of one if a company has at least one board member connected to the Democrats, but no board member connected to the Republicans and a value of zero otherwise.

In addition, the paper uses a number of control variables. The first variable is *lnCap*, which captures the log of the size of the company.<sup>22</sup> The second variable, *BM*, represents the company's book-to-market ratio. The Herfindahl index is included in order to take into account the intensity of competition in the industry in which the company operates. This index is calculated based on the sales of all competitors with the same 2-digit SIC code. In order to control for the investment level, the profitability, and the cost structure of the company, three accounting variables are included as further independent variables. The first accounting variable is the ratio of capital expenditure to sales, which controls for the possibility that a company that has recently invested in its facilities is expected to subsequently increase its production. The second variable is the ratio of EBITD to assets, which takes into account the possibility that a government agency may award procurement contracts to healthy companies that can be expected to survive in the long-run. The third accounting variable is the ratio of cost of goods sold to sales, which is important to consider as cost-efficient producers are more likely to be awarded with procurement contracts. Finally, to control for the possibility that Republican and Democratic are simply on different growth trajectories, we control for the growth in sales in the two-year period before the election.<sup>23</sup> More formally, we use variations of the following empirical specification:

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<sup>22</sup> In the robustness section, we control for more flexible functional forms of size.

<sup>23</sup> Alternatively, we control for the growth in firm size and in procurement contracts in the two-year period before the election. The results, which are available upon request, do not change.

$$\begin{aligned} \ln \Delta C_i = & \alpha + \beta_1(\ln Cap)_i + \beta_2(BM)_i + \beta_3(HF\_index)_i + \beta_4(CAPEX / Sales)_i + \\ & + \beta_5(EBITD / Assets)_i + \beta_6(CostGood / Sales)_i + \beta_7(SalesGrowth)_i + \\ & + \beta_8(dRep)_i + \beta_9(dDem)_i + \varepsilon_i \end{aligned}$$

where  $\ln \Delta C_i$  is the log of the change in the sum of procurement contracts between the two periods before and after the 1994 (2000) midterm (presidential) election.

Table 7 reports the results of the cross-sectional analysis for the 1994 midterm election. Model 1 and Model 2 include the Republican and Democratic dummy variable, respectively, as well as the first three control variables. The coefficient for the Republican dummy variable is positive and significant at the 1% level, while the coefficient for the Democratic dummy variable is negative and significant at the 5% level. This suggests that Republican companies are more likely to experience an increase in government contracts in the post-election period, while Democratic companies are more likely to experience a decrease in government contracts in this period. Model 3 includes both political dummy variables at the same time showing that they remain significant, although the Democratic dummy variable is now significant at the 10% level.<sup>24</sup>

Model 4 also includes the second and third accounting ratio, EBITD to assets and cost of goods sold to sales, respectively. While neither of these variables proves to be significant, the two variables of interest remain significant at their previous levels. The same holds for Model 5, which also includes the growth in sales as an additional control variable. The coefficient for this control variable is significant at the 5% level and thus suggests that companies that are on a growth trajectory before the election increase their government procurement awards after the election. The more important result for the purpose of this study is that the Republican and Democratic dummy variables remain significant even after controlling for the pre-election sales growth.

The coefficient for the Herfindahl index is positive and significant throughout the different models. This suggests that the lower is the level of competition in the industry in which a company operates the more likely the company is to gain more government contracts. Thus, it is easier for a company to gain market shares for government contracts in a less competitive industry.

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<sup>24</sup> Note that these two variables are negatively correlated with a correlation coefficient of -0.2046 (p-value = 0.0002) such that the significance of the coefficients decreases.

In Models 6 to 8, interaction variables are included to test for the heterogeneity in the types of political connections. We concentrate here on companies with connections to the Republican Party as the winning party in the 1994 election and define three interaction variables. The first interaction variable considers companies in which the Republican board member had a political career in the defense sector; this includes all the former Republican politicians who worked for the department of defense. The second interaction variable focuses on companies in which the Republican board member was a congressman or senator. This is particularly important for the 1994 midterm election. Finally, the third interaction variable deals with companies that are headquartered in a state with a Republican majority in the 1994 senate election. The results show that none of these interaction variables proves to be significant and that the Republican dummy variable remains significant in each specification. This suggests that it is only important to have a political connection, independent of the exact nature of this political connection.

In addition to controlling for the variables described above, it is also important to rule out the possibility that Republican and Democratic companies happen to be in certain industries that benefit from an increase or suffer from a decrease in government spending. In this case, the observed pattern would not be due to a company's political affiliation, but simply due to the industry in which it operates. As discussed previously, the industry distribution of Republican companies is not statistically different from the industry distribution of Democratic companies.

To address the industry impact more rigorously, the estimations in Model 9 and Model 10 include industry controls as additional explanatory variables. In Model 9, dummy variables are included for each of the industries in the Fama-French 30-industry classification.<sup>25</sup> In Model 10, dummy variables are included for companies only in those industries in which Republican companies appear to be overrepresented in 1994 based on the Fama-French 30-industry classification shown in Figure 1: 1 (Food Products), 8 (Healthcare, Medical Equipment, Pharmaceutical Products), 19 (Petroleum and Natural Gas), 20 (Utilities), 24 (Business Supplies and Shipping Containers), and 29 (Banking, Insurance, Real Estate, Trading). Only in these industries there are at least five companies that are connected to the Republicans. The results in Model 9 and Model 10 show that the earlier findings remain true even after controlling for an industry effect. The coefficients for the Republican and Democratic dummy variables are again

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<sup>25</sup> To be precise, 29 dummy variables are included in order to avoid redundancy.

significant at the 10% and 5% level, respectively. This suggests that the results for the 1994 midterm election are not driven by the change in government spending in the specific industry that happens to comprise companies with a particular political preference.

Finally, in model 11 we include controls for the political donations made by each company. The underlying data are from the Center for Responsive Politics (CRP), a non-partisan research organization that collects information on corporate donations to the Republican and Democratic Party. Specifically, we use these data to create two dummy variables *dDonDem* and *dDonRep* for the 1994 election. The first (second) variable takes a value of 1 if the company donates more to Democrats (Republicans) than to Republicans (Democrats) and zero otherwise. Model 11 shows that donations do not have any impact on contract awards while the significance for the coefficients for board affiliations remains unchanged.

Thus, the inclusion of control variables does not change the main statement that Republican companies are more likely to see an increase in the value of their procurement contracts after the 1994 midterm election, while Democratic companies are more likely to lose contracts.

Table 8 reports the results for the estimation for the second event period, which captures the time before and after the 2000 presidential election. The explanatory variables are the same variables as in Table 7. The only exception is the interaction variable in Model 7, which differs from that in Model 7 in Table 7 as it takes into account Republican board members with a former career in the government, reflecting the nature of the 2000 election as a presidential election. The results suggest that Republican companies significantly increase their government procurement contracts after the election. The coefficient for the Republican dummy variable is significant for each specification, almost always at least at the 5% level. At the same time, the coefficient for the Democratic companies, while negative, fails to be statistically significant.

Using the same methodology as for the analysis in Table 7, Model 9 and Model 10 in Table 8 comprise industry controls for the event of the 2000 presidential election. In Model 9, dummy variables are again included for each of the industries in the Fama-French 30-industry classification. In Model 10, dummy variables are again included for companies only in those industries in which Republican companies appear to be overrepresented in 2000 based on the Fama-French 30-industry-classification. As shown in Figure 1, these are the same six industries in 2000 as in 1994. Only in these six industries there are at least four companies that are

connected to the Republicans in 2000. The results show that the Republican dummy variable is significant even at the 1% level in both specifications, while the Democratic dummy variable is negative, but fails to be significant. These results suggest, consistent with the results for the 1994 midterm election, that the observed effect is not driven by specific industries. Also consistent with the results for the 1994 election, Model 11 shows that the coefficient for Republican board connections remains significant even after including companies' donations before the 2000 election. Again, the donations neither to Republicans nor to Democrats prove to be significant in explaining the allocation of procurement contracts.

Overall, the empirical results suggest that companies that are connected to the Republican Party benefit from the Republican win in the 1994 midterm election as well as the Republican win in the 2000 presidential election. They receive more government contracts following the two respective elections. By contrast, companies connected to the Democratic Party lose government contracts after the elections. These results are robust to a number of control factors that capture both company- and industry-specific characteristics. In particular, the results are robust to industry controls and seem to be driven by political affiliations rather than changes in procurement contracts across industries.

#### **4. Further tests and robustness**

This section presents a number of robustness tests that are described in more detail below.

##### **4.1. Choice of the dependent variable**

The dependent variable in the multivariate estimations is the log of the change in the sum of procurement contracts between the two periods before and after the 1994 (2000) midterm (presidential) election. The choice of this dependent variable addresses the issue of the existence of extreme negative and positive outliers in the raw variable, while maintaining the cardinality of the observations. An alternative estimation technique is to transfer the cardinal into an ordinal variable. For robustness, the multivariate estimations are rerun as ordered logit models where the dependent variable is now a number between 1 and 5 depending on which of the five  $\Delta C_i$  groups



the company falls in to. This ordinal classification is the same one used in the univariate tests in section 3.1. The rest of the control variables are exactly the same variables as before.

The results of this estimation, which are available upon request, are the same as before. The Republican dummy variable is positive and significant for both the 1994 and 2000 election, while the Democratic dummy variable is negative for both elections, but significant only for the 1994 election. Thus, the results are robust to a different specification of the dependent variable.

#### **4.2. Type of companies and different trajectories**

In the empirical estimations, we control for various company-specific factors to address the possibility that the observed differences in changes in procurement contracts between Republican and Democratic companies might not be due to their political connections, but rather due to the fact that these firms are different from each other and on potentially different trajectories. We perform additional tests to rule out this possibility.

First, we allow for more flexible functional forms of size. While we control for the size of the company in our estimations, it might be that only certain size groups benefit or suffer from a change in procurement contracts. Therefore, we create size quintiles (deciles) for our sample companies and include dummies for these quintiles (deciles). The results, which are available upon request, do not materially change. The sign and significance of the political dummy variables remains the same, which suggests that the results hold true also for more flexible forms of size.

Second, to address the possibility that Republican companies experience an increase in procurement contracts and Democratic companies experience a decrease in procurement contracts over the sample period irrespective of the two political events, we create an artificial placebo event that is unaffected by any election. We choose the year 1997 as the placebo event, which covers a 3-year period before and after with no change in the political landscape. If the documented results were simply due to different trajectories for Republican and Democratic companies, the coefficients for both parties should be significant not only for the 1994 or 2000 event, but also for the 1997 placebo event. The results of the estimation for this event are reported in Table 9 and show that neither the coefficient for the Republican nor the one for the

Democratic companies proves to be significant. Thus, it is not the time trend that generates the results but rather the specific political changes occurring in the election years.<sup>26</sup>

### **4.3. Different types of political connections**

The paper focuses on board members as the source for political connections. We classify companies as Democratic or Republican if they have at least one board member with a connection to the one party and no other board member with a connection to the other party. In order to shed more light on the robustness of the results, we run two further robustness tests. First, we test the marginal impact of having a second board member from the same party. This applies to 39 of the 116 connected companies in 1994 and to 20 of the connected companies in 2000. The results (not included) show that the influence of an additional board member is not significant. Second, we test whether the specific nature of a political connection makes a difference. We follow the notion of relatedness in Goldman, Rocholl, and So (2007) and sort former politicians into those whose political experience is related to the industry of the company for which they work and those for whom this criterion does not apply. Consistent with their results for the value impact of these connections, we do not find a difference between these two types. Taken together, these results suggest that board connections matter independent of their exact extent and nature.

There are also several other ways in which a company may become politically connected, e.g. through indirect ways such as lobbyists and consultants, or through other direct ways such as donations. As mentioned in the introduction, existing studies provide at best mixed evidence on whether donations help companies in becoming politically connected. Furthermore, even if they do, Jayachandran (2006) raises the question whether donations have a causal effect on firm value or simply represent industry preferences. Consistent with the latter, Goldman, Rocholl, and So (2007) show that donations lose their explanatory power once the industry effect is taken into account. As mentioned before, we collect donation data for the 1994 and 2000 elections from the Center for Responsive Politics (CRP), a non-partisan research organization that collects information on corporate donations to the Republican and Democratic Party and then construct

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<sup>26</sup> A third potential way to address the issue of different trajectories would be to consider only those companies that are Republican (Democratic) in 1994 and Democratic (Republican) in 2000. However, as mentioned before, the whole sample only comprises 5 companies that fit these criteria.

dummy variables. The results in Model 11 of Table 7 and Model 11 of Table 8 show that the donation variables are not significant, while the board connections variables remain significant. As a further robustness test, we create a continuous donation variable, which records for each company the percentage amount donated to Republicans out of the total political donations made by that company. The results, available upon request, remain the same.

#### **4.4. First event period**

One last point is that the period before the 1994 election comprises two different presidencies: a Republican presidency until 1992 and a Democratic Presidency after 1992. However, this setting imposes an even higher hurdle to find any evidence for the political influence on the allocation of procurement contracts. For robustness we repeat the analysis using the years 1993 and 1994 as the pre-period and the years 1995 to 1998 as the post-period. As the two periods do not have the same duration, we use as the dependent variable the log of the change in the average annual amount in contracts between the period from 1993 to 1994 and the period from 1995 to 1998. The results on the Republican and Democratic dummy variables remain as before.

### **5. Conclusion**

As government intervention in economic activity can result in a significant reallocation of resources, some companies have the incentive to become politically connected. In previous studies, these connections have been shown to result in an increase in shareholder value as measured by changes in company stock prices around political events.

This paper takes a first step in disentangling the source of this value by identifying one direct way in which political connections affect the value of the largest U.S. publicly traded companies. Based on the analysis of the individuals who serve on the board of directors of all S&P500 companies, the paper classifies these companies into those that are connected to the Democrats and those that are connected to the Republicans. The paper asks whether political connections affect the allocation of procurement contracts awarded to these companies following the 1994 midterm election in which majority control in House and Senate shifts from the

Democratic to the Republican Party and following the 2000 presidential election in which the Presidency shifts from the Democratic to the Republican Party.

The main findings are that following the 1994 midterm election and the 2000 presidential election Republican companies are more likely to experience an increase in the total value of their procurement contracts while Democratic companies are more likely to experience a respective decrease. These results remain statistically significant after controlling for company characteristics as well as for the industry in which the company operates.

The results suggest that, even within the confine of the strong legal system of the U.S., political connections have a significant impact on the allocation of government resources.

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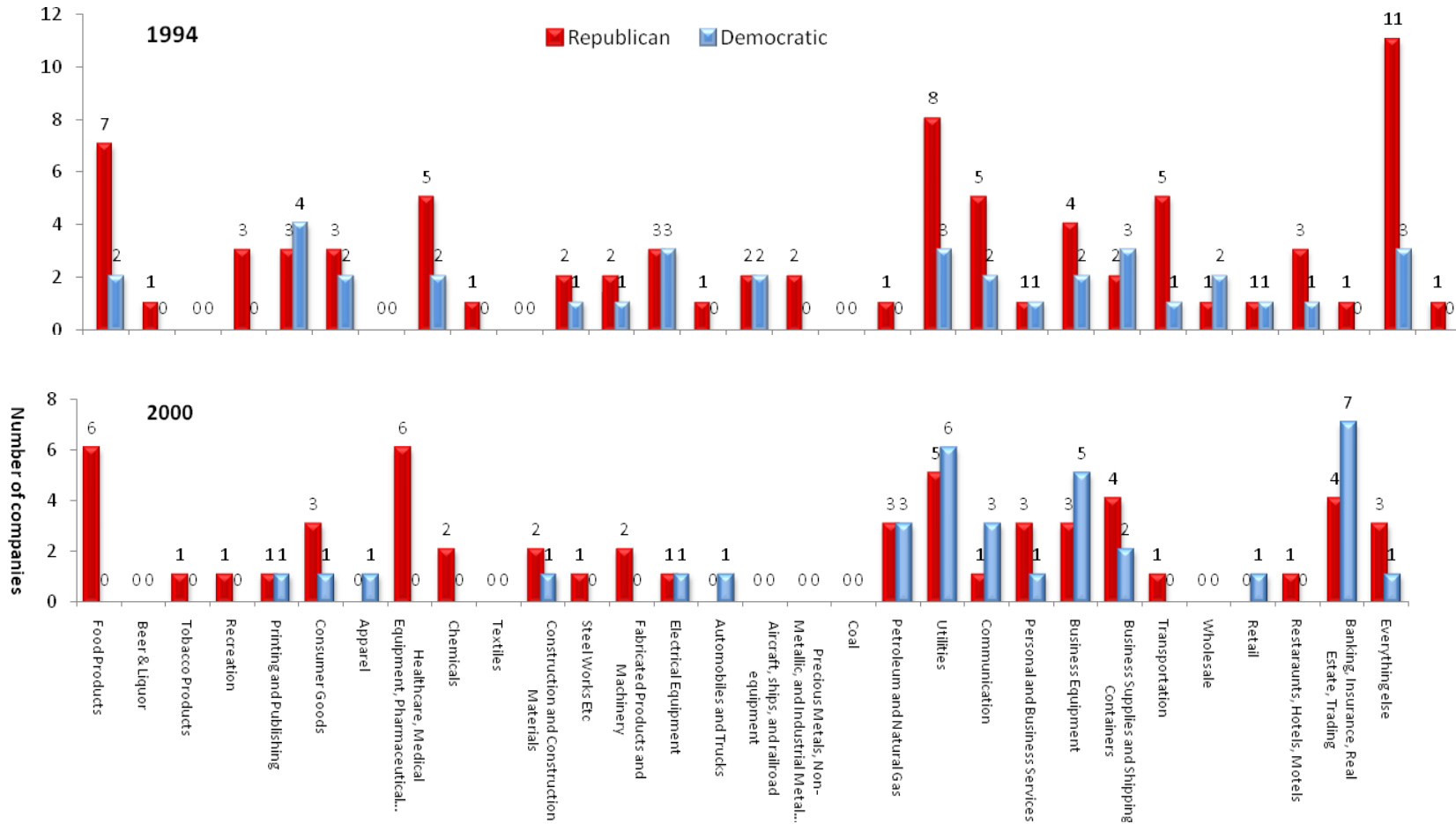
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**Figure 1: Distribution of politically connected companies across the Fama-French 30 industries**





**Table 1: Procurement awards of two sample companies**

Table 1 shows descriptive statistics for two of our sample companies that receive procurement awards during the period surrounding the 1994 midterm election. Both companies are classified to the “petroleum and natural gas” industry based on the Fama-French 30 industry classification. The value of procurement contracts awarded by the U.S. government between 1990 and 1998 is found using information provided by FPDS-NG (Federal Procurement Data System – Next Generation). Accounting variables are from Compustat and are based on values at the end of 1994. The listed board members are those with a former political affiliation. For each board member with a former political position we provide information on his/her former position.

	Phillips Petroleum	Occidental Petroleum
Procurement (\$million): 1990~1993(A)	120.0	169.5
Procurement (\$million): 1995~1998(B)	289.3	143.7
Difference (B – A)	169.3	-25.8
Growth rate (%)	141.1	-15.2
Market Cap (\$million)	8,568.7	6,099.4
Asset (\$million)	11,436.0	17,989.0
Sales (\$million)	12,211.0	9,236.0
EBITD (\$million)	1,752.0	1,539.0
CAPEX (\$million)	1,216.0	1,103.0
Book-to-market	0.66	0.93
Connected Board member (Nomination year)	James B. Edwards (1983) Lawrence S. Eagleburger (1993) Norman R. Augustine (1989)	Albert Gore (1972) Ray R. Irani (1984)
Connected Party	Republican	Democratic

#### The political career of connected board members

Board member	Year(s) of service	Position	Connected party
James B. Edwards	1981-82	Secretary of Energy Dept.	Republican
Lawrence E. Eagleburger	1989-93	Secretary of State Dept.	Republican
Norman R. Augustine	1977	Under Secretary of Defense Dept.	Republican
Albert A. Gore	1953-71	Senator in Tennessee	Democratic
Ray R. Irani	1994	Member of President Clinton's Export Council	Democratic

**Table 2: Procurement awards in the United States between 1990 and 2004**

Table 2 presents the value and number of procurement contracts awarded by the U.S. government between 1990 and 2004. It shows the total value of procurement contracts (in \$ million), the number of contracts, and the share of the value awarded by the Defense Department, the Energy Department, and NASA. All procurement data are from FPDS-NG (Federal Procurement Data System – Next Generation).

Year	Value of Contracts (in \$ million)	Number of Contracts	Share by Department(in % of value)			
			Defense	Energy	NASA	Others
1990	158,150	371,514	66.6	13.4	6.7	13.3
1991	169,079	422,275	62.5	14.3	8.6	14.6
1992	159,277	506,592	63.4	13.0	6.2	17.4
1993	165,534	450,340	58.8	12.0	12.9	16.3
1994	170,680	459,692	63.6	12.4	5.7	18.3
1995	165,275	527,085	65.5	11.1	4.4	19.0
1996	201,876	592,985	63.5	9.4	11.2	16.0
1997	177,945	537,696	66.0	10.5	3.4	20.0
1998	183,793	537,246	64.7	10.1	4.1	21.0
1999	189,312	567,669	64.8	10.7	3.6	20.9
2000	208,208	613,655	66.5	8.3	2.8	22.3
2001	213,840	691,568	66.2	9.4	2.5	21.9
2002	281,240	902,218	67.3	8.0	2.0	22.7
2003	335,237	1,503,145	65.6	8.9	4.2	21.3
2004	351,107	2,843,212	68.9	6.1	4.4	20.7
Mean	208,704	768,459	65.3	10.0	5.2	19.5
Sum	3,130,553	11,526,892				

**Table 3: Summary statistics for the sample companies**

Panel a) of Table 3 presents descriptive statistics for the 319 S&P500 companies that obtain government procurement contracts of more than \$1 million during the 1990 to 1998 period. Panel b) presents descriptive statistics for the 338 S&P500 companies that obtain government procurement contracts of more than \$1 million during the 1996 to 2004 period. These companies are sorted based on the political connections of their board members in 1994 (panel a) and 2000 (panel b). The reported values for Market Cap, Assets, Sales, Earning before income tax and depreciation, Capital Expenditure and Book-to-Market Equity Ratio are measured as of the end of 1994 (panel a) and 2000 (panel b). A company is classified as politically connected if it has at least one board member with the following former position: President, Presidential (Vice-Presidential) Candidate, Senator, Member of the House of Representatives, Governor, Mayor, (Assistant) Secretary, Deputy Secretary, Deputy Assistant Secretary, Under Secretary, Director (CIA, FEMA), Deputy Director (CIA, OMB), Commissioner (IRS, NRC, SSA, CRC, FDA, SEC), Representative to the United Nations, Ambassador, Staff (White House, President, Presidential campaign), Chairman of the Party Caucus, Chairman or Staff of the Presidential Election campaign, and Chairman or member of the President's Committee/Council.). A company is classified as Rep (Dem) if it has only Republican (Democratic) affiliated board members.

**a) 1994 Midterm election**

Variable	Full Sample		Rep		Dem	
	Mean	Median	Mean	Median	Mean	Median
Market Cap (\$ million)	7,534	3,711	11,136	6,718	5,952	3,151
Asset (\$ million)	14,514	4,886	21,825	8,338	13,565	5,109
Sales (\$ million)	8,268	4,507	12,989	8,087	8,191	4,854
EBITD (\$ million)	1,420	623	2,096	1,193	1,186	493
CAPEX (\$ million)	553	220	835	356	491	294
Book-to-market	0.57	0.51	0.57	0.47	0.55	0.55
No. of companies	319		79		36	

**b) 2000 Presidential election**

Variable	Full Sample		Rep		Dem	
	Mean	Median	Mean	Median	Mean	Median
Market Cap (\$ million)	29,882	8,925	41,189	12,532	23,384	10,013
Asset (\$ million)	32,984	10,077	25,333	12,372	73,934	18,142
Sales (\$ million)	14,663	7,156	18,285	10,070	19,965	9,260
EBITD (\$ million)	3,024	1,298	3,555	2,047	4,321	1,841
CAPEX (\$ million)	1,073	332	1,152	584	1,558	659
Book-to-market	0.49	0.38	0.40	0.30	0.65	0.54
No. of companies	338		54		35	

**Table 4: Tenure and timing of nomination of political boards**

Panel a) of Table 4 reports the mean, median, and maximum period of time (in years) between the nomination of a politically connected board member and the 1994 midterm election and the 2000 presidential election, respectively. Panel b) presents the number of nominations of politically connected board members in specific years. The first sorting criterion is based on the year in a presidential cycle in which a politically connected board member is nominated. 1<sup>st</sup> year refers to nominations in the next year after a presidential election (e.g. 1981, 1985, 1989); 2<sup>nd</sup> year refers to nominations in the second year after a presidential election (e.g. 1982, 1986, 1990); 3<sup>rd</sup> year refers to nominations in the third year after a presidential election (e.g. 1983, 1987, 1991), and 4<sup>th</sup> year refers to nominations in the fourth year after a presidential election (e.g. 1984, 1988, 1992). The second sorting criterion is based on whether a board member is nominated in an odd or an even year. The third sorting criterion is based on whether the incumbent President is from the Republican or Democratic Party. The fourth and fifth criteria are based on whether the Republican or Democratic Party holds the majority in the Senate and House, respectively. In election years, the calculation of the year starts on the day after the election; in non-election years it starts on Nov. 11<sup>th</sup>.

**a) Tenure of connected boards before the 1994 election and the 2000 election**

		1994 Election			2000 Election			All
		Rep	Dem	Total	Rep	Dem	Total	
Number of nominations of connected board members		152	71	223	91	57	148	371
Tenure	Mean	5.23	7.22	5.86	5.77	5.03	5.49	5.71
	Median	3	6	4	5	3	4	4
	Max	20	22	22	14	23	23	23

**b) Nomination timing of connected boards**

Nomination	Rep	Dem	Total
Total	244	127	371
<i>Year in presidential cycle</i>			
1 <sup>st</sup> year	105	43	148
2 <sup>nd</sup> year	55	24	79
3 <sup>rd</sup> year	50	32	82
4 <sup>th</sup> year	34	28	62
<i>Odd/Even Years</i>			
Odd Years	155	75	230
Even Years	89	52	141
<i>President</i>			
Republican	109	58	167
Democratic	135	69	204
<i>Senate Majority</i>			
Republican	69	65	134
Democratic	175	62	237
<i>House Majority</i>			
Republican	46	42	88
Democratic	198	85	283

**Table 5: Value of procurement contracts for sample companies**

Panel a) of Table 5 summarizes the value of procurement contracts (in \$million) for the sample of 319 S&P500 companies between 1990 and 1998. Panel b) summarizes the value of procurement contracts (in \$million) for the sample of 338 S&P500 companies between 1996 and 2004. A company is classified as Rep (Dem) if it has only Republican (Democratic) affiliated board members. Based on the political connections of their board members, the sample companies are sorted into three groups: Republican, Democratic, and Others. The left columns report the sum of the procurement contracts for all companies, while the right columns report the average of the procurement contracts.

**a) 1994 Midterm election**

Year	Sum of procurement contracts (\$ million)				Mean of procurement contracts (\$ million)			
	Full Sample	Rep	Dem	Others	Full Sample	Rep	Dem	Others
1990~1998	475,632	297,913	31,749	145,970	1,491	3,771	882	716
1990~1993 (A)	187,829	113,127	15,314	59,387	589	1,432	425	291
1995~1998 (B)	233,594	152,954	12,611	68,029	732	1,936	350	333
Difference (B-A)	45,765	39,826	-2,703	8,641	143	504	-75	42
Growth rate (%)	24.4	35.2	-17.6	14.6	24.4	35.2	-17.6	14.6
No. of companies	319	79	36	204	319	79	36	204

**b) 2000 Presidential election**

Year	Sum of procurement contracts (\$ million)				Mean of procurement contracts (\$ million)			
	Full Sample	Rep	Dem	Others	Full Sample	Rep	Dem	Others
1996~2004	755,883	211,037	27,132	517,713	2,236	3,908	775	2,079
1996~1999 (A)	270,013	80,725	10,876	178,412	799	1,495	311	717
2001~2004 (B)	403,164	108,995	12,057	282,112	1,193	2,018	344	1,133
Difference (B-A)	133,151	28,270	1,181	103,700	394	524	34	416
Growth rate (%)	49.3	35.0	10.9	58.1	49.3	35.0	10.9	58.1
No. of companies	338	54	35	249	338	54	35	249

**Table 6: Summary statistics for the sample companies by categories**

The 319 sample companies in panel a) are classified into one of five groups based on the difference in the amount of procurement contracts that they receive in the four-year period before 1994 and the four-year period after 1994. The 338 sample companies in panel b) are classified into one of five groups based on the difference in the amount of procurement contracts that they receive in the four-year period before 2000 and the four-year period after 2000. Each of the five groups comprises the same number of companies (with the exception of group 1 in the 1994 sample and groups 1, 2 in the 2000 sample), with group 1 comprising the companies with the lowest dollar difference and group 5 comprising the companies with the highest dollar difference in procurement contracts across the two time periods.

**a) 1994 Midterm election**

Group	Number of companies				Mean of difference amount (\$1,000)			
	Rep	Dem	Others	Sum	Rep	Dem	Others	Total
1	15	12	36	63	-210,320	-649,105	-135,099	-250,915
2	7	9	48	64	-8,556	-7,543	-8,026	-8,016
3	14	4	46	64	809	641	363	478
4	21	7	36	64	13,414	23,757	14,263	15,023
5	22	4	38	64	1,943,093	1,246,390	351,570	954,583
Full sample	79	36	204	319	504,131	-75,076	42,358	143,463

**b) 2000 Presidential election**

Group	Number of companies				Mean of difference amount(\$1,000)			
	Rep	Dem	Others	Sum	Rep	Dem	Others	Total
1	8	11	48	67	-61,217	-316,145	-302,384	-275,847
2	4	7	56	67	-2,848	-3,680	-2,492	-2,637
3	9	7	52	68	2,223	2,765	2,791	2,713
4	20	3	45	68	22,228	46,554	25,228	25,286
5	13	7	48	68	2,177,392	646,535	2,439,035	2,204,493
Full Sample	54	35	249	338	523,510	33,754	416,466	393,938

**Table 7: Cross-section analysis for the change in procurement contracts of 1994 sample**

The sample consists of 319 companies in the S&P 500 in the year 1994. The dependent variable is the log of the absolute value of the change in the sum of procurement contracts between 1990-1993 and 1995-1998; this variable is multiplied by 1 if the change is positive and -1 if it is negative. lnCap is the log of the company's market capitalization. BM is the ratio of the book value and market value of equity. Hf\_index is the Herfindahl index, which is based on the sales amount in the 2-digit SIC industry of the company. CAPEX/Sales is the ratio of capital expenditure to sales. EBITD/Assets is the ratio of earnings before income tax and depreciation to assets. CostGood/Sales is the ratio of cost of goods sold to sales. All control variables are from COMPUSTAT and are measured at the end of 1994. dRep is a dummy variable that takes a value of one if a company is politically connected to the Republicans and zero otherwise. dDem is defined similarly. SalesGrowth is the growth rate in sales between 1990-1991 and 1992-1993. dDefense is a dummy variable that takes a value of one if a company has political board members with a defense career. dCongress is a dummy variable that takes a value of one if a company has political board members with a former career in congress. dHeadquarter is a dummy variable that takes a value of one if the board is connected to the party that wins the 1994 senate election in the company's headquarter state. FF30 industry includes dummy variables for each industry according to the Fama-French 30-industry classification. Six industries is a dummy variables that takes a value of 1 if a company operates in food, health, oil, utility, finance, or business supplies according to the Fama-French 30-industry classification and a value of zero otherwise. dDonRep is dummy variable that takes the value of one if a company donates more to Republicans than to Democrats in the 1994 elections, and dDonDem is defined equivalently. All models are adjusted for heteroskedasticity. The t-values are in parentheses. The symbols \$, \* and \*\* denote statistical significance at the 10%, 5% and 1% levels, respectively.

Model	1	2	3	4	5	6	7	8	9	10	11
lnCap	0.005 [0.01]	0.274 [0.74]	0.043 [0.11]	0.093 [0.24]	0.018 [0.04]	0.007 [0.02]	0.048 [0.12]	-0.004 [0.01]	-0.458 [1.08]	-0.062 [0.16]	0.222 [0.50]
BM	1.092 [0.94]	1.125 [0.97]	1.086 [0.95]	0.829 [0.72]	0.875 [0.75]	0.971 [0.78]	0.915 [0.74]	0.926 [0.76]	1.123 [1.07]	0.987 [0.74]	0.807 [0.66]
Hf_index	0.206** [3.70]	0.205** [3.52]	0.205** [3.60]	0.209** [3.66]	0.209** [3.67]	0.209** [3.74]	0.211** [3.79]	0.203** [3.62]	0.216** [3.02]	0.211** [3.57]	0.212** [3.71]
Capex/Sales	0.136* [2.38]	0.135* [2.32]	0.133* [2.29]	0.142* [2.42]	0.141* [2.40]	0.149* [2.56]	0.137* [2.30]	0.144* [2.45]	0.069 [1.08]	0.144* [2.40]	0.146* [2.46]
EBITD/Assets				-0.045 [0.75]	-0.058 [0.99]	-0.036 [0.59]	-0.031 [0.50]	-0.022 [0.35]			-0.049 [0.81]
CostGood/Sales				-0.004 [0.18]	-0.008 [0.33]	-0.004 [0.17]	-0.003 [0.14]	-0.001 [0.03]			-0.002 [0.08]
dRep	2.933** [3.15]		2.599** [2.72]	2.539** [2.63]	2.664** [2.76]	2.500* [2.46]	2.684* [2.55]	3.842** [3.33]	2.912** [3.07]	2.429* [2.49]	2.601** [2.70]
dDem		-2.824* [2.40]	-2.092\$ [1.73]	-2.240\$ [1.82]	-2.207\$ [1.81]				-2.305\$ [1.72]	-2.183\$ [1.73]	-2.256\$ [1.82]
SalesGrowth					0.878* [2.24]						
dRep*dDefense						2.091 [1.05]					
dRep*dCongress							0.987 [0.56]				
dRep*dHeadquarter								-2.061 [1.29]			
FF 30 industry									yes		
Six industries										yes	
dDonRep											-0.690 [0.57]
dDonDem											-0.760 [0.52]
Constant	-2.942 [0.89]	-4.117 [1.26]	-2.904 [0.88]	-2.290 [0.57]	-1.488 [0.37]	-2.205 [0.55]	-2.557 [0.63]	-2.441 [0.61]	2.857 [0.66]	-2.224 [0.65]	-3.287 [0.75]
Observations	319	319	319	319	319	319	319	319	319	319	319
R-squared	0.07	0.06	0.08	0.08	0.09	0.08	0.07	0.08	0.19	0.09	0.08

**Table 8: Cross-section analysis for the change in procurement contracts of 2000 sample**

The sample consists of 338 companies in the S&P 500 in the year 2000. The dependent variable is the log of the absolute value of the change in the sum of procurement contracts between 1996-1999 and 2001-2004; this figure is multiplied by 1 if the change is positive and multiplied by -1 if it is negative. InCap is the log of the company's market capitalization. BM is the ratio of book to market value of equity. Hf\_index is the Herfindahl index, which is based on the sales amount in the 2-digit SIC industry of the company. CAPEX/Sales is the ratio of capital expenditure to sales. EBITD/Assets is the ratio of earnings before income tax and depreciation to assets. CostGood/Sales is the ratio of cost of goods sold to sales. All control variables are from COMPUSTAT and are measured at the end of 2000. dRep is a dummy variable that takes a value of one if a company is politically connected only to the Republicans and a value of zero otherwise. dDem is a dummy variable that takes a value of one if a company is politically connected only to the Democrats and a value of zero otherwise. SalesGrowth is the growth rate in sales between 1996-1997 and 1998-1999. dDefense is a dummy variable that takes a value of one if a company has political board members with a defense career. dGovernment is a dummy variable that takes a value of one if a company has political board members with a former career in the government. dHeadquarter is a dummy variable that takes a value of one if the board member is connected to the party that wins the majority in the company's headquarter state in the 2000 election. FF30 industry includes dummy variables for each industry according to the Fama-French 30-industry classification. Six industries is a dummy variables that takes a value of 1 if a company operates in food, health, oil, utility, finance, or business supplies according to the Fama-French 30-industry classification and a value of zero otherwise. dDonRep is dummy variable that takes the value of one if a company donates more to Republicans than to Democrats in the 2000 elections, and dDonDem is defined equivalently. All models are adjusted for heteroskedasticity. The t-values are in parentheses. The symbols \$, \* and \*\* denote statistical significance at the 10%, 5% and 1% levels, respectively.

Model	1	2	3	4	5	6	7	8	9	10	11
InCap	-0.238 [0.76]	-0.129 [0.41]	-0.223 [0.71]	-0.264 [0.82]	-0.278 [0.87]	-0.282 [0.88]	-0.275 [0.85]	-0.274 [0.85]	-0.208 [0.57]	-0.287 [0.89]	-0.319 [0.84]
BM	-4.122** [4.45]	-4.042** [4.32]	-4.046** [4.34]	-4.061** [3.91]	-3.894** [3.79]	-4.100** [3.96]	-4.096** [3.95]	-4.092** [3.94]	-3.320** [2.94]	-3.426** [3.51]	-4.215** [3.88]
Hf_index	0.002 [0.03]	0.000 [0.00]	0.000 [0.00]	0.013 [0.17]	0.008 [0.11]	0.015 [0.20]	0.016 [0.22]	0.016 [0.21]	-0.019 [0.18]	-0.018 [0.23]	0.006 [0.09]
Capex/Sales	-0.096* [2.33]	-0.102* [2.39]	-0.095* [2.27]	-0.101* [2.39]	-0.117** [2.78]	-0.102* [2.46]	-0.102* [2.46]	-0.104* [2.51]	-0.062 [1.41]	-0.078\$ [1.80]	-0.100* [2.35]
EBITD/Assets				-0.033 [0.67]	-0.017 [0.33]	-0.031 [0.63]	-0.031 [0.62]	-0.033 [0.66]			-0.028 [0.55]
CostGood/Sales				-0.017 [0.84]	-0.011 [0.53]	-0.018 [0.88]	-0.018 [0.88]	-0.019 [0.93]			-0.016 [0.75]
dRep	2.454* [2.59]		2.380* [2.49]	2.474* [2.57]	2.458* [2.54]	2.472* [2.48]	2.418\$ [1.66]	2.001\$ [1.70]	2.890** [2.81]	2.653** [2.63]	2.364* [2.43]
dDem		-1.037 [0.78]	-0.629 [0.47]	-0.626 [0.46]	-0.582 [0.43]				-0.670 [0.46]	-0.272 [0.20]	-0.704 [0.52]
SalesGrowth					0.763\$ [1.89]						
dRep*dDefense						0.706 [0.27]					
dRep*dGovernment							0.196 [0.11]				
dRep*dHeadquarter								1.474 [0.87]			
FF 30 industry									yes		
Six industries										yes	
dDon_rep											0.315 [0.32]
dDon_dem											2.229 [1.25]
Constant	6.320* [2.08]	5.827\$ [1.91]	6.223* [2.05]	8.132* [2.16]	7.415* [1.97]	8.275* [2.19]	8.193* [2.17]	8.298* [2.20]	5.299 [1.11]	6.590* [2.12]	8.389\$ [1.97]
Observations	338	338	338	338	338	338	338	338	338	338	338
R-squared	0.09	0.08	0.09	0.10	0.10	0.10	0.10	0.10	0.17	0.11	0.10



**Table 9: Placebo event year test for the change in procurement contracts of 1997 sample**

The sample consists of 345 companies in the S&P 500 in the year 1996. The dependent variable is the log of the absolute value of the change in the sum of procurement contracts between 1995-1997 and 1998-2000; this figure is multiplied by 1 if the change is positive and multiplied by -1 if the change is negative. InCap is the log of the company's market capitalization. BM is the ratio of the book value of equity to the market value of equity. Hf\_index is the Herfindahl index, which is based on the sales amount in the 2-digit SIC industry in which a company operates. CAPEX/Sales is the ratio of capital expenditure to sales. EBITD/Assets is the ratio of earnings before income tax and depreciation to assets. CostGood/Sales is the ratio of cost of goods sold to sales. All control variables are from COMPUSTAT and are measured at the end of 1997. dRep is a dummy variable that takes a value of one if a company is politically connected only to the Republicans and a value of zero otherwise. dDem is a dummy variable that takes a value of one if a company is politically connected only to the Democrats and a value of zero otherwise. SalesGrowth is the growth rate in sales between 1994-1995 and 1996-1997. FF30 industry includes dummy variables for each industry according to the Fama-French 30-industry classification. Six industries is a dummy variables that takes a value of 1 if a company operates in food, health, oil, utility, finance, or business supplies according to the Fama-French 30-industry classification and a value of zero otherwise. All models are adjusted for heteroskedasticity. The t-values are in parentheses. The symbols \$, \* and \*\* denote statistical significance at the 10%, 5% and 1% levels, respectively.

Model	1	2	3	4	5	6	7	8
InCap	0.936** [2.83]	0.961** [2.93]	0.930** [2.80]	0.763* [2.22]	0.943** [2.87]	0.955** [2.89]	0.949** [2.87]	1.047** [2.67]
BM	-1.104 [0.69]	-0.974 [0.63]	-1.095 [0.68]	-1.017 [0.63]	-0.805 [0.52]	-1.330 [0.80]	-1.186 [0.73]	-2.569 [1.26]
Hf_index	0.007 [0.13]	0.007 [0.12]	0.008 [0.14]	0.002 [0.03]	0.008 [0.15]	0.014 [0.25]	0.006 [0.11]	0.022 [0.34]
Capex/Sales	-0.088\$ [1.75]	-0.088\$ [1.76]	-0.088\$ [1.74]	-0.089\$ [1.82]	-0.086\$ [1.71]	-0.091\$ [1.84]	-0.089\$ [1.80]	-0.108 [1.48]
EBITD/Assets	0.000 [0.00]	0.000 [0.01]	0.001 [0.02]	-0.003 [0.06]	-0.002 [0.04]	0.002 [0.06]	-0.005 [0.11]	
CostGood/Sales	-0.002 [0.09]	0.000 [0.00]	-0.002 [0.07]	0.001 [0.05]	-0.003 [0.14]	-0.003 [0.14]	-0.003 [0.12]	
dRep	0.627 [0.67]		0.663 [0.70]	0.726 [0.76]				1.014 [1.01]
dDem		0.267 [0.20]	0.409 [0.30]	0.613 [0.46]				0.200 [0.14]
SalesGrowth				2.605* [2.00]				
FF 30 industry								yes
Constant	-7.330\$ [1.90]	-7.622* [1.99]	-7.376\$ [1.91]	-6.623\$ [1.70]	-7.450\$ [1.95]	-7.359\$ [1.90]	-7.271\$ [1.87]	-11.143** [2.61]
Observations	345	345	345	345	345	345	345	345
R-squared	0.05	0.04	0.05	0.06	0.05	0.06	0.05	0.11